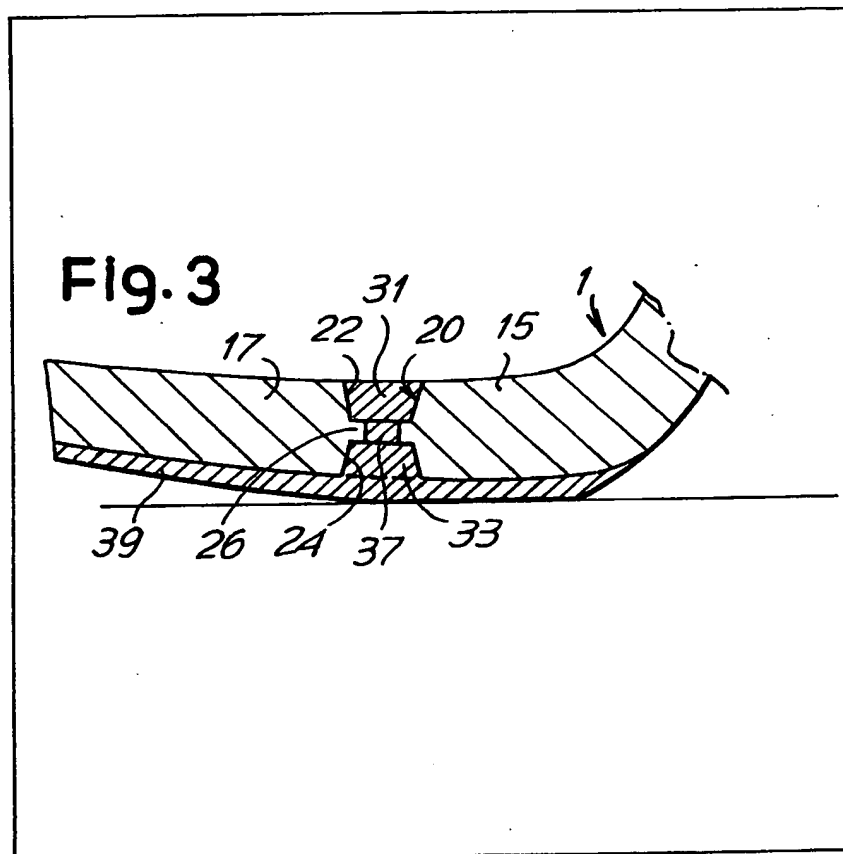


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(54) Method for producing a clog-like shoe base with flexible area

(57) A relatively rigid sole portion 15, 17 of a shoe base structure 1 has recesses 22, 24 extending transversely therein to define a zone 26 of reduced cross-section about which the shoe bends in use. The recesses are filled with a soft and resilient material 31, 33, 37 which adheres to the parts 15, 17 of the sole on both sides of the recesses.



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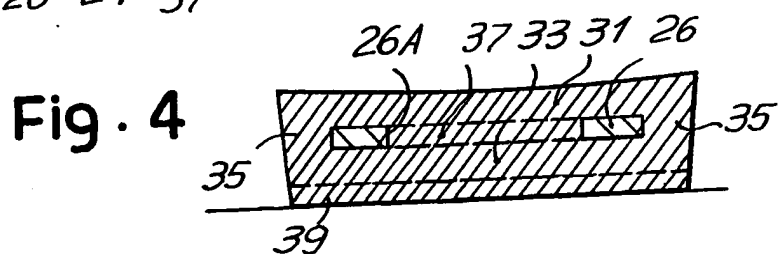
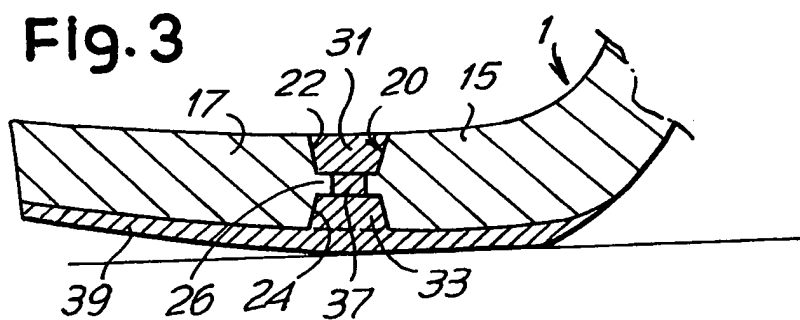
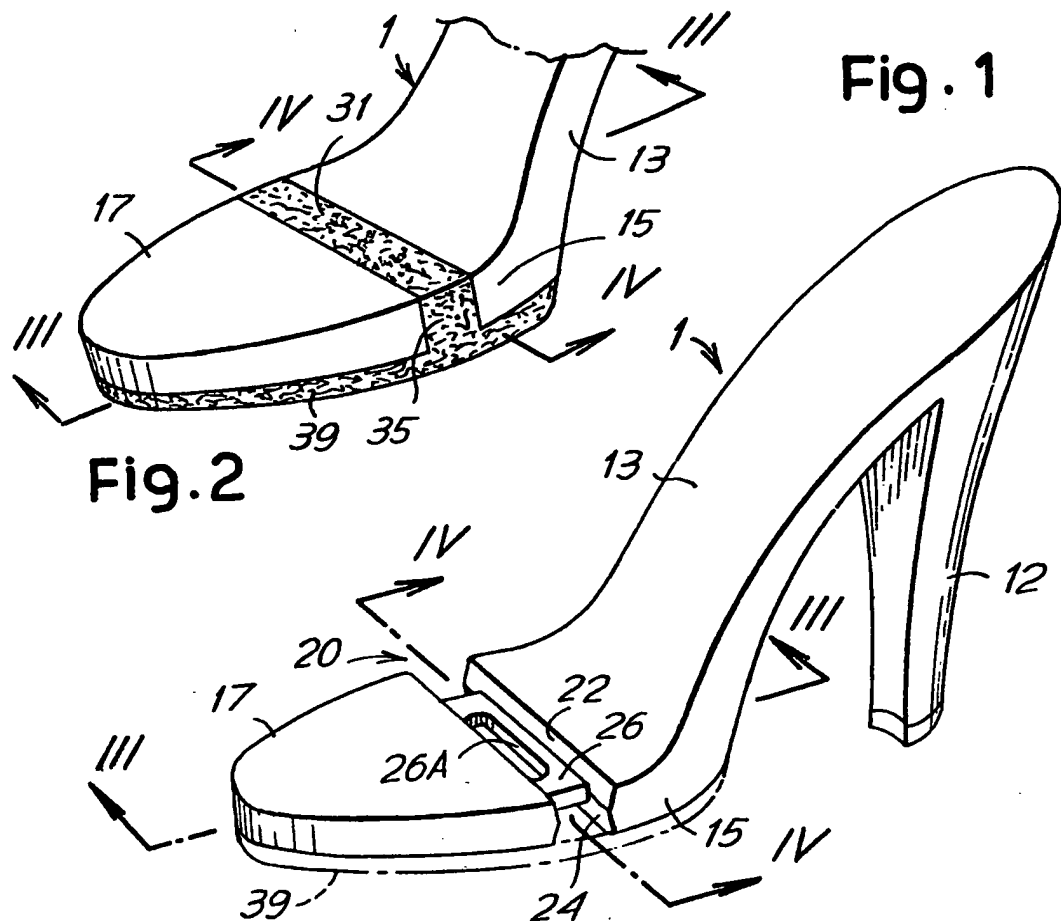


Fig. 5

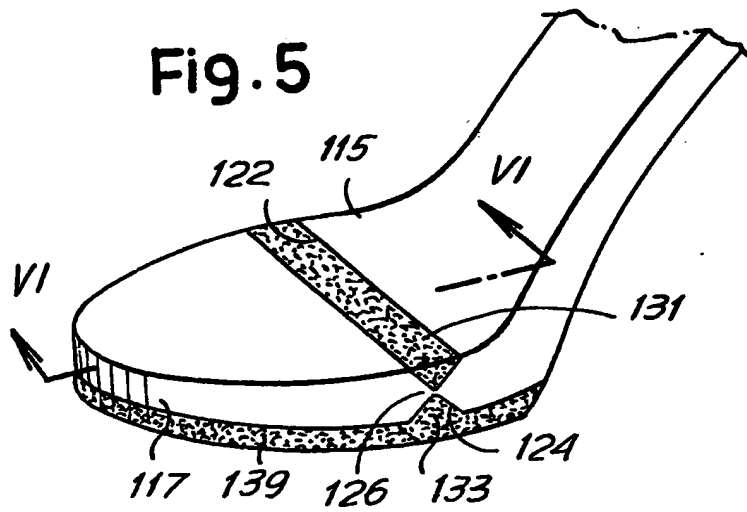


Fig. 6

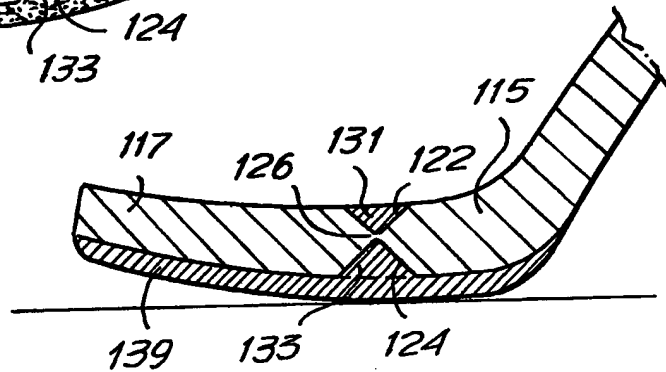


Fig. 7

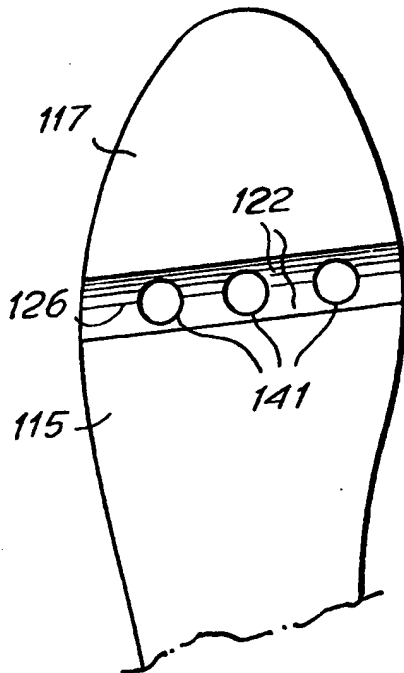


Fig. 8

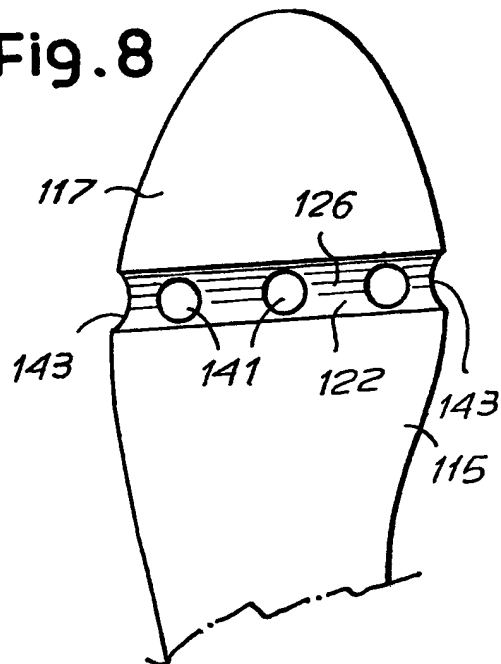


Fig.9

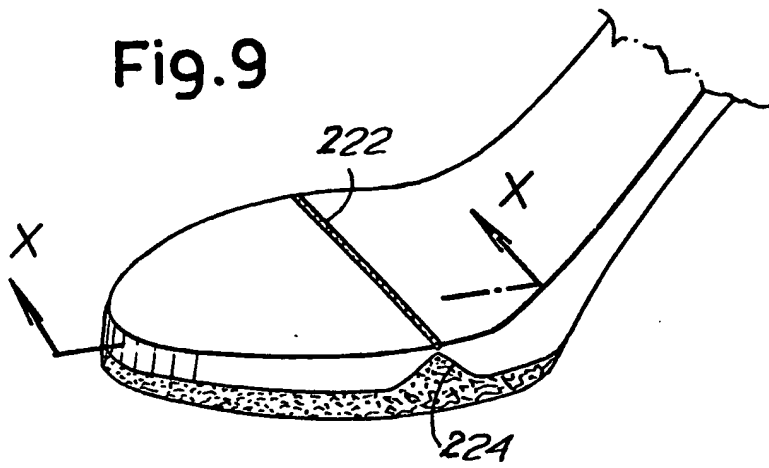


Fig.10

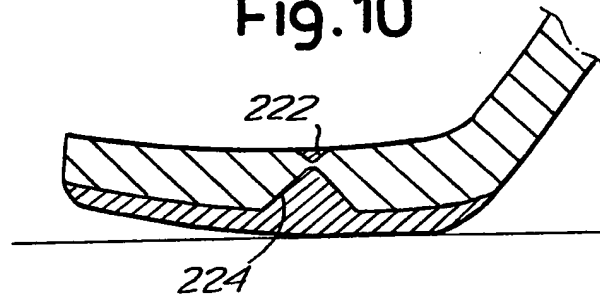


Fig.11

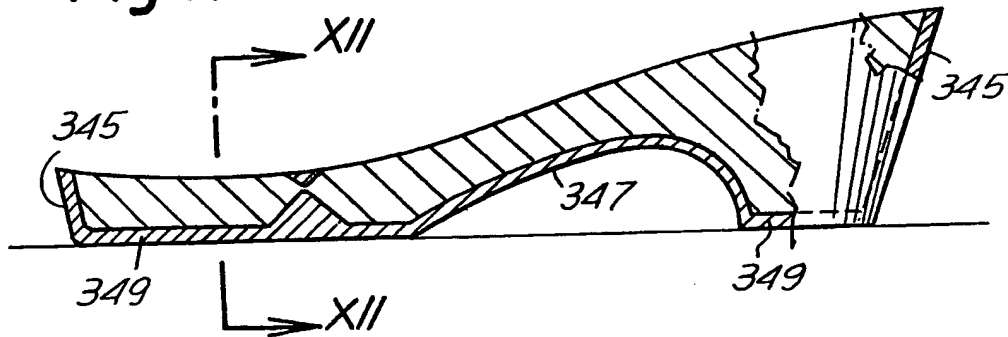
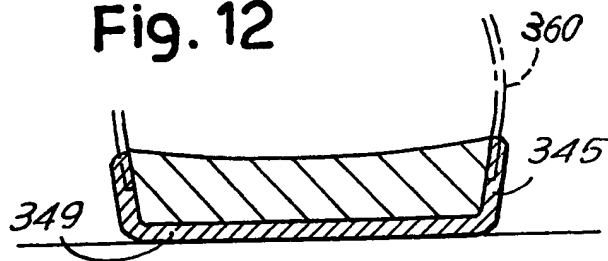


Fig. 12



SPECIFICATION

Method for producing a clog-like shoe base with flexible area, and a shoe base thus produced

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The invention relates to a method for the production for a clog-like shoe base or the like, of the type made of wood or moulded synthetic resin and being capable of flexure in the sole portion about a transverse line generally coinciding with the ball of the foot, and further relates to a clog-like shoe base produced by the method.

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Conventional shoe bases of the type referred to above are made of relatively flexible synthetic resin in the sole portion, but suffer from the disadvantage that the upper of the shoe proves difficult to apply, since it is not possible to key the nails for securing the upper into the resin and there are not always ideal adhesives available. In addition to this the materials used are expensive. An alternative known design utilizes a wooden base made of two rigid separate parts, connected by flexible means. The flexible means can be moulded, but difficulties arise in the positioning of the two separate parts within the mould. Moreover the bonding of a preformed flexible means to the two parts is relatively precarious and costly. Furthermore two rigid pieces of wood to be combined must also be of an aspect color type and direction of wood grain) allowing the two components to match. These previous designs consequently result in costly and somewhat impractical industrial solutions.

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An object of the invention is to achieve a satisfactory shoe base from both the aesthetic and functional viewpoints, which can also be produced with limited industrial costs.

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A method according to the invention comprises the steps of:

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(a) providing a shoe base structure having there- in transversely extending recesses which define in the sole portion a transverse region of considerably reduced thickness, and,

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(b) filling said recesses with a relatively soft and flexible material to restore the thickness of said region of the sole portion of said base structure. The reduced thickness part of the shoe base structure is thus likely to deform and break off between the soft and flexible material filling during the use of the shoe.

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The invention further resides in a clog-type shoe base or the like comprising a rigid base structure having a sole part, upper and lower transverse recesses in an intermediate region of the sole part, at which region said sole part is intended to bend and a filling in said recesses, consisting of a relatively soft and flexible material, said filling allowing bending of said sole part.

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In the accompanying drawings;

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Figure 1 is a perspective view of a shoe base structure in accordance with one example of the present invention, prior to filling of the recesses;

Figure 2 shows the sole portion of the base structure of Figure 1, with the flexible material applied;

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Figures 3 and 4 show sections along III-III and IV-IV

in Figures 1 and 2;

Figure 5 is a view similar to Figure 2, of a shoe base structure according to a second example of the invention;

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Figure 6 is a section along VI-VI of Figure 5;

Figure 7 shows a plan view of the sole portion shown in Figure 5 but with the filling material omitted;

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Figure 8 is a view similar to Figure 7, of a modification;

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Figures 9 and 10 are views similar to Figures 5 and 6 respectively of a shoe base structure according to a third example of the invention;

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Figure 11 illustrates a modification of the example shown in Figures 9 and 10; and

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Figure 12 is a sectional view on the line XII-XII of Figure 11.

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Referring first to Figures 1 to 4, a unitary clog-type shoe base structure 1, which can be made of wood or injection-moulded synthetic resin, has a heel part 12, an arch part 13 coinciding with the shoe-heel, and a sole part sub-divided into two parts 15 and 17 by a transverse deeply recessed region 20. Where the structure 1 is formed from wood the structure is machined to remove wood to form the recesses. The region 20 includes an upper channel 22, a lower channel 24 and a connecting zone 26 of reduced cross-section. The width of the connecting zone 26 is less than that of the sole part and thus is inset from the perimeter of parts 15 and 17 of structure 1 on both sides thereof. The zone 26 is of greatly reduced thickness in relation to the parts 15 and 17 (to form the two channels 22 and 24) and a further reduction in the effective transverse section can be obtained by forming a wide opening 26A within the zone 26.

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The clog base structure as described above is completed to form the shoe base by means of soft and flexible material introduced into the recesses defined by channels 22 and 24 and by the shaped part of zone 26. The flexible filling material fills the upper channel 22 with one part 31, and the lower channel 24 with another part 33 and the outer parts of the channels and the opening 26A with parts 35 and 37 respectively.

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The flexible material 31, 33, 35 and 37 can be introduced by an injection moulding technique, in which the single component consisting of the clog base structure 1 can be easily introduced into and positioned in the mould. During the moulding a lower sole 39 can also be formed, though this may equally well be applied at a later stage. Alternatively, the flexible material can also be applied by adhesively bonding pre-formed and shaped sections of the filling material into the recessed region 20 to define the parts 31, 33, 35 and 37 described above. In each case after the injection moulding step, or after applying the pre-shaped portions (or after a finishing operation, if needed) a perfectly uniform shoe base is obtained including the satisfactory positioning of region 20 and the soft and flexible material components.

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The shoe base thus produced is flexible along a transverse line coinciding with the region 20. The zone 26 is able to flex or can break during use, but always in association with the soft and flexible

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material surrounding it; this material ensures in each case the link between the two parts 15 and 17 of the sole part of the shoe base structure, the flexible material suitably adhering to the parts 15 and 17.

- 5 Figures 5, 6 and 7 show a design smaller to that described, in which the two sections 115 and 117 are separated by a recessed region having by upper and lower channels 122 and 124 respectively, each channel having an approximate V-shaped and defining a reduced section zone 126 connecting the two parts 115 and 117. The two channels 122 and 124 are filled with flexible and elastic filling material which is indicated at 131 and 133. As with the previous example a thin lower sole 139 may also be provided.
- 10 In Figure 5, 6 and 7 the reduced section area 126 extends to the sides of the sole part. Holes 141 can be provided in area 126 so that when the soft material of items 131, 133 and eventually 139 is injection-moulded in a die in which component 115, 20 117 is located, a link between channels 122 and 124 is provided by means of the holes 141.

In the variation in Figure 8, (using the same reference numbers) in addition to the holes 141, side recesses 143 are provided so that the reduced thickness zone 126 ends inside the peripheral profile of the clog base structure.

In the example illustrated in Figures 9 and 10 a similar arrangement to that in Figures 5 and 7 is provided, but with two channels 222 and 224 of dimensions differing in their transverse section.

- In Figures 11 and 12 a similar design to that in Figures 5 to 7 or 9 and 10 is shown, but also providing for the formation of a facing 345, 347, 349 on the side and lower parts of the clog-base structure. Item 349 forms a ground engaging bearing sole. When a facing 345 is provided it is possible to make use of the moulding operation producing the facing 345 on the base of the shoe, to secure a shoe upper 360 to the base. The upper 360 is placed in the die and secured to the base by the moulding of facing 345.

CLAIMS

- 45 1. A method of producing a clog-like shoe base or the like comprising the steps of:-
 (a) providing a shoe base structure having therein transversely extending recesses which define, in the sole portion, a transverse region of considerably reduced thickness; and
 50 (b) filling said recesses with a relatively soft and flexible material to restore the thickness of said region of the sole portion of said base structure, whereby said region of reduced thickness can deform or break within said soft and flexible material during use of the shoe utilizing the base.
2. A method as claimed in claim 1, wherein the base structure consists of wood shaped by machining, and wherein sections of wood are removed to ensure the required thickness reduction in said region.
3. A method as claimed in claim 1, wherein the base structure is formed by injection moulding.
4. A method as claimed in claims 1, 2 and 3, 65 wherein the thickness reduction is achieved with

upper and lower transverse recesses, and communicating passages are formed in the reduced thickness material between the upper and lower transverse recesses.

- 70 5. A method as claimed in any one of the preceding claims, wherein shaped components formed from relatively soft and flexible material and shaped to conform to the recesses are adhesively bonded into the recesses.

- 75 6. A method as claimed in any one of claims 1 to 4, wherein the base structure having said region of reduced thickness is introduced into a mould, and material able to shape itself into the recesses of the clog-like structure and to solidify thereafter is injected into the mould, forming relatively soft and flexible material which adheres to the walls of the recesses.

- 80 7. A method as claimed in claim 6, wherein the injection of said material also forms part of a flexible sole on the lower face of the base-structure.

- 85 8. A method as claimed in claim 7, wherein the injection of said material also forms a side facing, also suitable to secure a pre-positioned shoe upper to the shoe base structure.

- 90 9. A clog-like shoe base or the like, comprising a rigid base structure having a sole part, upper and lower transverse recesses in an intermediate region of the sole part, at which region said sole part is intended to bend and a filling in said recesses, consisting of a relatively soft and flexible material, said filling allowing bending of said sole part.

10. A shoe base as claimed in claim 9, wherein said base structure has V-shaped recesses which define, between their apices, a region of reduced thickness.

11. A shoe base as claimed in claim 9, wherein said base structure has flat base channel shaped recesses, the flat bases of the recesses defining between them a region of reduced thickness.

- 105 12. A shoe base as claimed in any one of claims 9 to 11, wherein a passage or passages through said region interconnect said transverse recesses.

13. A shoe base as claimed in any one of claims 9 to 12, wherein said filling material is injected into said recesses and the injected material also defines a lower sole on the base structure.

14. A shoe base as claimed in claim 13, wherein the injected material also forms a side facing on the base structure whereby a shoe upper is secured to the base structure.

15. A shoe base substantially as hereinbefore described, with reference to Figures 1 to 4 of the accompanying drawings.

16. A shoe base substantially as hereinbefore described, with reference to Figures 5 to 7 of the accompanying drawings.

17. A shoe base as claimed in claim 16, modified substantially as hereinbefore described with reference to Figure 8 of the accompanying drawings.

- 125 18. A shoe base substantially as hereinbefore described, with reference to Figures 9 and 10 of the accompanying drawings.

19. A shoe base as claimed in claim 18, modified substantially as hereinbefore described with reference to Figures 11 and 12 of the accompanying

drawings.

20. A method of manufacturing a shoe base substantially as hereinbefore described with reference to the accompanying drawings.

- 5 21. A shoe base manufactured in accordance with the method claimed in any one of claims 1 to 8 and claim 20.

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